



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,500	02/10/2004	Jathan D. Edwards	10415US01	2311

7590 12/19/2005

Attention: Eric D. Levinson
Imation Corp.
Legal Affairs
P.O. Box 64898
St. Paul, MN 55164-0898

EXAMINER

BOUSIKARIS, LEONIDAS

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/775,500

Applicant(s)

EDWARDS, JATHAN D.

Examiner

Leo Boutsikaris

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-16, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Orlov (US 6,108,110).

Regarding claims 1, 9, Orlov discloses an optical holographic recording system wherein a light beam 16 from an input light source is incident on an optical component comprising a spatial light modulator ("SLM") 12 and a diffuser 28. The arrangement of the above elements is such that the input portion of the input beam is transmitted through the SLM, thus being encoded with data and producing the object beam, and the perimeter portion of the input beam is transmitted through the diffuser, thus producing the reference beam (Figs. 1-2, lines 19-56, col. 4, lines 33-44, col. 5). It is noted that the SLM 12 includes controllable optical elements in the form of pixels 14.

Regarding claim 2, the diffuser plate 28, positioned around the controllable SLM cells constitutes a perimeter reference zone acting on the perimeter portion of the input beam 16.

Regarding claim 3, the reference zone, i.e., the diffuser plate, comprises a non-controllable optical element extending around the set of the controllable SLM pixels.

Art Unit: 2872

Regarding claims 4, 10, the perimeter zone comprising the diffuser 28 constitutes a reference mask.

Regarding claims 5, 11-12, the reference zone optically adjusts an optical characteristic of the input beam, e.g., its optical phase.

Regarding claim 13, Orlov teaches that the reference generator 28 may be of different types, depending on the multiplexing scheme. One such type is a phase plate (which adjusts the polarization of the light beam), see lines 49-52, col. 4).

Regarding claims 6, 14, the SLM pixels are transmissive optical elements, and the perimeter zone comprises a non-controllable optical element, i.e., a diffuser.

Regarding claims 7, 15, in one embodiment, the SLM operates in a reflective mode (lines 65-67, col. 7).

Regarding claims 8, 19, the data encoded object beam and the reference beam are directed into a holographic medium 40, for creating a hologram in the medium (lines 57-67, col. 4).

Regarding claim 16, the holographic recording system of Orlov inherently includes a control unit to control the operation of the SLM and impose the data onto the object beam.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29

Art Unit: 2872

USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 17-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/775,505. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the '505 application is a broader version of claims 17-18 of the present application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

Claims 17-18 are allowable over the prior art of record for at least the reason that even though the prior art discloses holographic recording systems where the object and reference beams are along the same axis, and on the same side of the recording material, the prior art fails to teach or reasonably suggest a method comprising creating an object beam from a perimeter portion of an input light beam using a spatial light modulator that includes a set of controllable optical elements, and creating a reference beam from an interior portion of the input light beam using the spatial light modulator, as set forth by the claimed combination.

Art Unit: 2872

Kihara (US 2005/0243389, Fig. 1) and Mori (US 2005/0200928, Fig. 3) disclose holographic recording systems wherein an SLM is used to produce both the object beam (from the interior portion of the SLM) and the reference beam (from the perimeter portion of the SLM). None of these two references is a prior art reference.


Conclusion

The allowability of claims 2-7, 9-16, 18-19, indicated in the Office Action of 8/10/2005 is hereby withdrawn due to the newly found reference of Orlov. The examiner regrets any inconvenience caused to Applicant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LEONIDAS BOUTSIKARIS
PRIMARY EXAMINER


Leo Boutsikaris, Ph.D., J.D.
Primary Patent Examiner, AU 2872
December 12, 2005